

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Sanitary Medicine
Exercise
Satto

N^o 2 Mechanic's Instrument

1/2 Dil Acid Acetic or Vinegar. 0jj

Whites. 5 eggs.

If shaken well together

Spto Recd 9/

S. to. Turpentine 3 XIV

Camphoræ 31

Mix 3pt's of camppt, then Turpentine and
add acid egg mixture to this -

Pour this into acid very mixture.

Chlor. Hydrate splendid for colic

Ammon. Carb. dissolved in $\frac{1}{2}$ cup water
& put in $\frac{1}{2}$ pint water - for pneumonia Dr Gadsden

For capillary bronchitis in children

4. Pot. Bieromat. gro. /
Sugar

Sugar of milk. " IX
no Agave 9 3xx

Sig- 1 tea-spoonful every 10 minutes until symptoms are modified. Then every hour.

23400

1.

Notes on -

Lectures - delivered to the students of the National Vet. College, first lecture commencing Oct 25, 1892. (Prof. D. E. Salmon)

" Sporadic - a disease which may spread but is not epidemic

- (1) Enzootic prevailing over a certain section at a time
- (3) Epizootic prevailing over an extensive territory
- (4) Panzootic disease affecting all animals at a time ~~epizootic~~ & Anthrax
- (5) The highest loss from restriction on ^{cattle} animals, shipped to foreign countries was \$25,000,000

Before prohibition was put upon shipments of pork 1,200,000,000 lbs were sent to foreign countries per year. It shrank to 626,000,000 lbs after the restriction. There was a lost trade of 0,000,000 during the prohibition.

The shipments now take place without any restriction

— " — " Oct. 28, 1892 — " — " —

(1) Synonyms are different names applied to the same disease

Ex. Texas fever called Distemper in Va and Murrain in the Southern States.

(2) History or origin, where the disease was contracted.

(3) Symptoms, are all morbid phenomena accompanying the disease

(4) Pathognomonic, a term applied indicative of a particular disease or one that distinguishes it from other similar diseases

Ex. Vesicles of Variola or foot & mouth disease

(5) Clinical History a study of the symptoms when the patient is present. — Periods —

(a) Incubation from the time the animal is exposed until the disease appears

- (2) Invasion when it makes itself apparent by a rise of temp. &c
- (3) Augmentation or Increase when the disease is more marked
- (4) Acme or Violence when the disease is at its highest point
- (5) Decline when it disappears.

Pathological Anatomy consists of all the anatomical changes or lesions seen on P. M.

In Epizootic diseases the changes are "congestion and "Inflammation". The results of the above phenomena are:-

I Hemorrhage, the flowing of blood from broken or wounded vessels

(a) Petechia (flea bite) small spots of extravasation not above the skin

(b) Infarction the plugging of a vessel by an embolus.

II Effusion escape of fluids into cavities or a flowing out, *ex. serous*

4.

- III Hyper secretion - ex-nasal secretion of glanders.
- IV Ulceration, molecular death
 - Ex - Ulcer in intestines in hog cholera
- V Necrosis death of a part
 - Gangrene " + decomposition of a part.
- VI Hyperplasia (moulding) a new formation
 - Ex - tubercles of glanders
- VII Degeneration, a breaking down
 - Ex - Blood in Anthrax.

Etiology or cause -

- (a) External parasites - Ex - mange
- (b) Internal " or entozoa
- (c) Protozoa lowest forms of animal life - Ex Texas fever only known disease in U.S caused by protozoa
- (d) Fungi; an order of plants consisting of juxtaposed cells without chlorophyll
- (e) Bacteria lowest forms of vegetable life

(e) Bacteria

Micrococcus	○○○
Streptococcus	○○○○○○
Diplococcus	○○

If Bacillus or rod, which may divide by fission or spore formation when the nutrient is all used up. The spores are called the resting stage of the germ.

If Spirillum or corkscrew also grow as do the bacillus.

P. 5

Best known treatment for Actinomyces is Pot. Iod.

— " — " Nov 1, 1892 — " — "

Sanitary Treatment of Disease

1. Isolation
2. Disinfection, destruction of
germs by chemical agents
Conc 1 to 5000 or 1 to 1000

Sulph Acid good if for use
around dairies or where milder
less disinfectants are wanted
The walls should be scraped & wash-
ed & all debris removed from the
buildings

Fumigation sometimes used.

3. Quarantine involves,

(a) Inspection of all animals going into,
coming from or being slaughtered
in an infected district

And before any of the above steps
can be taken a permit must
be obtained from the sanitary officer

(5) Occision or Slaughter is the best way to stop the progress of the disease.

(a) Seizure before slaughter is made

(b) Condemnation

(c) Appraisement sometimes by state law & sometimes by national law. Two appraisers who are paid a salary are called in, and if they can't agree a third

(d) A place of Slaughter is selected which is not so difficult in the country as the city. In the latter ~~of~~ they are generally taken to the slaughter house. Killed & healthy ones taken for food the diseased, steamed & dried & used for fertilizer.

(e) Indemnity or Compensation -

Owners are compensated for destruction of their buildings.

(6) Quarantine of possums and restocking -

The period of quarantine depends upon the virulence of the disease and the surroundings

(7) Inoculation -

If an animal recovers from inoculation it obtains immunity. But this is not a good method of eradicating the disease. It has been practised for eradication of contagious pleura pneumonia, by inserting some exudate from a lung into the loose connective tissue of the tail. But for eradication it is not successful.

" — " — Nov. 4, 1892 — " — " — "

Inspection & quarantine of imported & exported animals -

Found in Rules & Regulations of U. S. Depart. of Agriculture - recd from Dr. Salmon.

" - " - " Nov 10, 1892 - " - " - "

Virus, a poison causing a morbid process or disease

Immunity, a condition of an organ or body whereby it resists the development of infections or morbid processes.

" Acquired Immunity from a previous attack or a modified form of disease

(2) Natural Immunity, natural resistance of the tissues or system;

(3) Congenital Immunity from birth.

(Tri-Chlor-Iodine said to produce immunity or cure Tetanus)

Pathogenic or disease producing germs gain access to the system by the ¹"Alimentary Tract

(2) Respiratory "

(3) Other mucous membrane

(4) Skin wounds.

The effects produced by Bacteria are:-

- (a) Thrombosis, causing hemorrhage &c
- (b) Chemical poisoning by-
 - (1) Ptomaines or toxins
 - (2) Ferments or tox albumins

Toxins in the blood produce toxæmia

Tox albumins " " " tox albuminæmia

I Contagion to come in contact

(a) immediate contagion, contact with infected or exposed objects

II Infectious, carried by air

— " — Nov, 11, 1892 — "(place of Dr. Ch. B. m.)

Pyæmia.—

Synonyms.— Pyæmia, pyogenic fever or purulent infection of blood.

The word pyæmia signifies pus in the blood, and the name was given before the pathology was well known.

Pus is a yellowish matter occurring on the surface of wounds

It is formed of liquor puris, which is a thin colorless fluid, and pus cells or corpuscles.

Pyæsia is a disease resulting from the entrance of germs into the blood, which become disseminated and cause metastatic abscesses.

Symptoms.—

Sudden appearance of fever, depression of spirits, loss of appetite, increased thirst, tumultuous heart beats, small pulse, mucous membranes injected, fast breathing, irregular movements in locomotion, expression of anguish. The fever may be irregular, ranging from 107° to below normal. and a recurrence of the fever symptom as above described, after a day or so of apparent improvement.

The wound changes in appearance & in a healthy to a sick or

violet color. The flow of pus becomes less in amount, thin and glairy. The healthy granulations almost disappear.

As the disease advances a discharge from the nose ^{may} occurs - at first serous and becoming purulent later. Abscesses may form in any part of the body producing special symptoms, according to the organ affected, as Icterus, pneumonia, lameness from abscesses in joints, Encephalitis etc. We have two forms of pyæmia.

- (a) Specific - example - strangles
- (b) Simple from absorption of germs from wounds.

Etiology -

by - *Staphylococcus albus*

" *aurens*

Streptococcus pyogenes

Micrococcus

Pyaemia only occurs after healing has commenced. The essential conditions being a broken surface of bone or broken veins.

A thrombus or clot forms in a vein, germs invade it, then follows softening of the plug and dissemination of the broken particles causing metastatic abscesses to form

Pathological Anatomy -

Metastatic abscesses are found in various parts, most commonly in the lungs and to a less extent in the liver, kidneys and spleen.

Pathological Physiology -

The first germ producing disease was discovered by Pasteur in 1878.

White corpuscles migrate to a wound, the vein walls become weakened, The thrombus breaks up, and the parts containing micro organisms are disseminated, causing the formation of abscesses.

Treatment. -

Is not satisfactory, the main point however being to support the animal by stimulants and nourishing foods.

— " — " — Nov 15, 1892. — " — " —

Septicaemia. -

Synonymo. - septic infection, putrid infection, & putrid fever.

is - a disease in which the blood is invaded by micro organisms which cause enlargement of the spleen, kidneys and etc. also a breaking down of the blood.

There are two forms of septicæmia. A specific form as in anthrax &c. and a simple form which will be considered here.

The symptoms of the simple form resemble those of pyæmia very much but generally in an aggravated form -

In addition. The escape of haemoglobin

into the urine is seen, and is called Haemoglobinuria. When the blood escapes it is called Haematuria.

This form usually occurs from wounds or abrasions. And may be caused by some germs that produce pyaemia.

The reasons why this disease is produced, instead of pyaemia, are:-

- (1) There is a greater violence of the germs.
- (2) The susceptibility of animals varies.
- (3) A greater number of germs enter the system.
- A) Spontaneous Septicaemia originates from pneumonia & etc.
- B) Traumatic septicæmia, from wounds.

Pathological Anatomy.-

The blood loses its coagulability, and germs are seen in it when examined with a microscope.

Fatty degeneration occurs, the muscles having the appearance of boiled flesh. Petechiae of the membranes is seen.

The carcass putrifies rapidly after death. The walls of the capillaries contain many bacteria, which are difficult to discover during life, especially during the first of an attack.

Treatment -

not satisfactory. However that indicated would be antiseptics, germicides & stimulants.

Septical Pyaemia -

- (A) Toxicaemia from absorption of ~~stomach~~
- (B) Tox albuminaemia " " fermento.

This disease is seen in diffuse gangrene of the foot, (Keratogenous membrane) and in gangrenous pneumonia.

The ^{intensity of the} symptoms depend upon the amount of poison absorbed. It is not produced by any certain bacteria. But may be caused by any saprophytic bacteria

Malignant Oedema.-

Is a disease caused by a small spore bearing ^{miasmatic} bacilli infecting a wound. The bacilli is anaerobic (cannot live in O₂) and described by Pasteur as a septic vibrio. The germ exists in rich garden soil; the difference between it, and the germ of charbon is: the latter has square ends, and is thicker and larger. While the former has round ends and is thin.

It produces disease by entering a fresh wound, or being injected into the connective tissues. But cannot do so by penetrating the skin or a granulated wound. Nor by entering the blood stream. as the oxygen destroys the germ. They are seen in the intestines during health and may penetrate an ulcer or wound in the intestinal tract and produce

the disease. After death the segments of the germs grow long.

→ — — — — — before death after death

And in about two months the virulence of the germ is lost if the animal body putrefies. If the body dries up before putrefaction the germ retains its vitality. They are very resistant to heat and antiseptics. It requires a sol. of 1 to 500 of corros. sub. to destroy them.

Symptoms.

Oedema with a collection of gas is produced. The temperature rises, the subcutaneous tissue being infiltrated with a reddish yellow liquid. The swelling resembles charbon but may be differentiated, by charbon not resulting from a wound. Also from pyæmia, from the kidneys & liver not being affected.

The wound has a gangrenous zone surrounding it.

Treatment -

Open the swellings and allow the germs etc to drain out, and use antiseptics

Puncture with the actual cautery and inject iodine

20.

" — " — Dec 6, 1892 — " — "

Strangles

Synonyms

English, Distemper-

French, La Gourme

German, Druse

This is an acute ^{contagious 1894} infectious disease affecting the horse, also, & mule. It is most frequently seen in young horses, and in those brought from the country to the city and in cold weather.

Etiology

It is due to a streptococcus. Infected animals contract it by coming in contact with the germ, which is often carried by the nasal secretions and may also be carried by the air. The incubation period is from 4 to 8 days.

Symptoms

Temperature elevated sometime as high as 106°F . Acute catarrh of nasal

mucous membrane from both sides. A characteristic abscess forms generally in the maxillary space.

Eruptions sometimes occur. These resemble pustules sometimes & again like the eruption of Urticaria. This eruption rapidly appears and then disappears rapidly again.

The period of duration when normal is from two to three weeks.

The irregular form are characterized by the formation of metastatic abscesses along the course of the lymphatics of the Trachea and in different parts of the body.

Pathological Physiology

The germ may gain access by the nasal mucous membrane or by the intestinal tract and then into the blood from here.

Prognosis

is generally favorable when

it runs a regular course.

But if the patient is weak and the irregular form occurs it is very often fatal.

Treatment -

Give good ventilation, good food and a constant temperature. Encourage the formation of abscesses by poulticing or a blister and then open them. If near the great vessels it is better to tear the tissues with the finger. The following treatment is recommended -

Carlsbad Salt -

Sod Sulph.	grams	75
" Chlor	"	20
• Bi Carb	"	5

Electuary -

Sod Sulph	grams	250
-----------	-------	-----

Antimony Blk	"	25
--------------	---	----

Licorice root & treacle to form an electuary.

— " — " — Dec. 9, 1892, — " — " — "
Tetanus or Lock jaw -

This is an infective disease caused by a bacillus, which finds its way to the tissues by means of a wound, it multiplies locally, producing poisonous chemical substances, which are diffused throughout the system causing disease characterized by various contractions of the muscles.



The bacillus producing tetanus is an obligatory anaerobic germ. It is found in rich garden soil, manure dust etc. It is widely diffused to all parts of the world, resists the effects of putrefaction for a long period and grows best at a temperature of 36 to 38° C. It is said to be slightly motile in liquids and produces disease by entering a surface

generally, multiplies and produces alkaloidal poisons, which enter the blood stream. The germs do not enter the stream if so they are destroyed by the O in the blood. All animals are attacked by it but it is most common in the horse, ass & mule, and is most commonly seen in warm climates.

3 poisonous alkaloids have been isolated by Brieges as follows:-

- (1) Tetanus
- (2) Tetanotoxin
- (3) Gasmatoxin

Two forms of tetanus are described
1st Infectious, due to the above germs
2nd Toxic " " " brucine, thebaine &c
Symptoms of the first or infectious form,
and classification

(1) Trismus when the spasms are confined
to the muscles of mastication

- (2) Orthotonus when the body is rigid and straight
- (3) Opisthotonus when it is curved, the curvature being down.
- (4) Pleurothotonus when the head is curved to one side.

Symptoms -

Protrusion of the membrane mucitans from retraction of the eye ball. Tail raised horizontally, great hyperesthesia when touched or excited, & the production of spasms by so doing.

The pulse or temperature are not materially changed. Cyanosis is noticed, from the lungs not acting properly which produces the non oxygenation seen by examination of the visible mucous membrane. The feces and urine are retained by non action of the organs in which they occur.

The larger proportion of dogs recover from tetanus.

Treatment.-

Remove the animal from excitement, place in slings, give liquid food and remove the feces and urine. Chlor. Hydrate, morphia and Gelsemium are recommended.

And Tri. Chlor. Iodine is a good germicide in this disease

Immunity is produced by the virus weakened by Tri. Chlor. Iodi, which is injected hypodermically. Blood serum taken from animals inoculated with the above and injected into those affected with the disease in the first stage, is said to have checked it

Antitoxin is the substance which neutralizes the effects produced by the germ.

" — " Dec., 15, 1892 — " — "

Anthrax

Synonyms. — Anthrax Fever, Carbuncular anthrax, Splenic Apoplexy.

French — Charbon or Sang de Rate

German — Miltzbrand or Karben — Kelkkrankheit —

Latin — Ignis sacer or Pestula maligna.

— Anthrax is a miasmatic non-contagious disease, due to an aerobic germs, which gains ^{to the system} access, by the mucous or other tract; and causes either a local or general disease, and local symptoms or death.

— It was definitely demonstrated by Koch in 1876 that the disease was caused by the bacillus anthracis.

The bacillus has very square ends and is constricted in the middle and when seen in the blood seems

two or three times the diameter of the corpuscles. This is not however the case, as in this condition, the bacillus consists of two or three segments and appears as one.

It multiplies by division, the segments grow long & again subdivide. When outside of the body and in the proper media the filaments grow very long. ~~The~~ The germ grows on various culture media, such as gelatine agar agar, potato &c. It appears unable to grow in distilled water, but multiplies rapidly in moisture containing organic matter. It is destroyed in a week or so, by desiccation owing to the absence of oxygen. From the same cause also spores do not form in the dead animal.

Cold has very little effect on the vigor or vitality; it grows best however at a temperature of 35°C and

not above 55°C . Attenuation is produced by heating at a temperature of 55°C for 15 minutes.

When moistness is all gone, and the temperature and other conditions are not favorable, the bacillus dries up & leaves a spore to prolong its life. The spore is very resistant, & may retain its vitality for 8 or 10 years, and form a new bacillus.

Neither water or boiling has any effect on the spore. It may however be destroyed by corrosives. 1 to 1000 in 15 minutes.

Anthrax may be produced by the germ entering the system, by the respiratory or alimentary tract, the skin, or other membranes lining the openings of the body.

In cattle it is generally produced by the ingestion of forage containing

spores. The spores germinate & form rods in the intestine, which pass into the blood. In addition it is produced in horses by entrance through the skin. And by the latter means produces External Anthrax or Malignant Pustule, which is usually sporadic.

Anthrax Fever or Splenic Apoplesy is generally confined to a locality, the germ being taken in with the coarse forage.

The disease is rarely produced by inhalation, but when it is the bacillus passes through the membranes & into the lymphatics.

The germs produce their effects ⁽¹⁾ mechanically by plugging vessels, & ⁽²⁾ chemically by producing poisonous alkaloids.

" — — Dec. 17, 1892. — " — " — " 31

Anthrax may be either sporadic, enzootic or epizootic. The soils most favorable for its propagation are: (1) a black loose & rich one rich in organic matter. (2) Lime marl and clay with organic matter. (3) a swampy or low land. The disease usually occurs during warm weather, when the soil water is lowest. It is observed most commonly, first in cattle & secondly in sheep & goats. Carnivora generally contract it by eating the cadaver. Fish and amphibia are said to be somewhat susceptible, a slight attack confers immunity for a short period.

The disease is most commonly seen in districts where part of the land is inundated for part of the year, the outbreak occurring when the land is drying. Frequently seen along the miss-rives, Nile and Danube.

Pathological Anatomy

- 1st Haemorrhage in any part of the body
- (2nd) A gelatinous bloody infiltration, which may be yellow, transparent or streaked with blood, the mass resembling domestic gelatine when prepared for dessert. The character of the infiltration is a pathognomonic lesion of this disease.
- (3rd) The spleen is almost always naturally enlarged being sometimes twice the natural size.
- (4) The blood generally black, not coagulable and resembling tar
- (5) Presence of Bacillus anthracis which is easiest found in the capillaries of the spleen and liver

The black tarry blood is generally found in and beneath the skin, the hemorrhages in loose connective tissue, in the muscles, which are dark red and friable, and on various membranes. The gelatine occurring in masses in the loose connective tissue generally in the neck around the trachea.

Intestines badly congested.

Endocardium stained a dark red color from a breaking down of the blood.

The spleen may be uniformly enlarged or have large tumors.

The intestinal contents bloody, the Lungs ecchymosed & odematous, trachea & bronchi contain bloody mucus, Brain congested.

Bones marked by bloody layers, Always Haematuria.

The blood does not regain its red color when brought to the light
Poikilocytosis an irregularity in the shape of the red blood corpuscle
Leucocytosis a transient increase in the number of white corpuscles
 The carcass loses heat slowly after death, body swells enormously, rigor mortis incomplete, decomposition rapid and a discharge from the mouth, nose and anus of bloody mucus.

In the apoplectic form a great many of these lesions are absent.

Symptoms -

Invasion sudden and rapid in all forms, fever high, petechiae of ~~inside~~ mucous membranes, swellings on the body. The symptoms vary somewhat according to the organ affected. Death generally occurs in from 1 to 3 days.

3 forms of Anthrax -

1st Acute

2nd Sub acute

3rd Apoplectic or Spleenic Apoplexy

Symptoms of the Apoplectic form -

The animal may be taken suddenly ill when eating or moving about and die immediately or from 3 to 5 minutes. This form is most common in sheep.

When cattle die from this form is generally the fat ones and the beginning of an outbreak.

Symptoms of the Acute form

Develops in from 10 to 24 hrs, temperature from 104 to 108° F., bellowing, and convulsions and bloody discharges. May have pulmonary instead of brain symptoms, cyanosis, invisible mucous membranes of the head.

convulsions unsteadiness of gait and death from asphyxia

The animal may show signs of improvement and the symptoms return with greater severity and death ensue. This form is known as Intermittent Anthrax.

(3) Sub Acute, (symptoms of)

The symptoms develop less rapidly and terminate in from 1 to 7 days.

Horses show colicky pains and recoveries are much more common in this form. Malignant purulæ is caused by the invasion of the bacilli themselves.

Both forms may be produced by feeding spores or inoculating rods under the skin.

Malignant Pustule -

The swellings are at first hard, and warm, circumscribed and afterwards become soft and doughy to the touch. The period of irritation being from 5-7 days. In this form of Anthrax a cure may be effected. Sores may occur in places far from the seat of inoculation.

When tumours occur in the mouth disease is known as Gloss anthrax, here in the larynx or pharynx as . They are rarely seen in the rectum, but when it does, it causes severe straining and death follows in 12 or 24 hrs.

Cattle most frequently die of Anthrax either or Splenic Apoplexy, less frequently of the carbuncular form, sheep most commonly of the apoplectic form.

Diagnosis of Anthrax -

Finding the bacillus sure one. It differs from that of malignant Oedema in that it is not so motile. The M. Oedema germ is longer and has rounded ends.

The Bacillus Quarter germ may also coexist but it is shorter thicker & has rounded ends and is anaerobic.

The location of an animal will help in the diagnosis. The temperature runs much higher than in any other pulmonary disease -

Prognosis -

In the apoplectic form all die. Other forms average from 70 to 80 %

" — " Dec 20 1892 — " — "

Treatment -

Prophylactic treatment is the most important. The carcasses must be destroyed by burning, steaming or be buried at least 6 ft deep and in the most secluded places. And the buildings and affected places thoroughly disinfected. The most satisfactory disinfectant being corrosive sublimate 1:1000 which is strong enough to destroy spores.

Wat lands should be drained and animals kept away from the affected localities. If however an outbreak occurs the animals should be moved at least a mile if possible.

Crocoline in 2 to 4 dr. doses is recommended. Sol. corros. sub 1 to 10,000 y podermically near the swellings, or a sol of Iodine as follows.

Iodine	30 pts.	1
d. Pot.	30 "	2
vas.	360 "	3

In the sub acute form calomel proves beneficial in small doses. Local tumors should be crucially & deeply incised and washed with carbolic acid or creoline sol.

It has been proposed to inoculate all animals at an outbreak with the bacillus of *erysipelas* which is said to be antagonistic to the bacillus *anthracis*.

Protective inoculation procures immunity for one year. Some animals have a natural immunity, the Algerian sheep being one so favored, except by inoculation of large and strong doses.

Horses are with difficulty made immune. Sheep and cattle attain a very marked immunity but it does not last more than a year. French writers recommend the inoculation of sheep while German

writers condemn it because about 15% of those inoculated died because of the virus being of unequal strength

Inoculation in cattle is much more profitable.

Methods of using Pasteur's Virus:-
the bottle not to be opened until ready for use. A syringe holding one gramme and divided into eight spaces should be used. Fill the syringe and inject one space under the skin inside of hind leg of sheep, wait days and inject another space.

In cattle inject 2 spaces behind shoulder. Pregnant cows and being omitted

Black Quarter

Synonyms -

Black Leg, Quarter Ill

German - Raupeckbran

French - Charbon Symptomatique or
Mal de Cuisse -

It is a bacterial disease of cattle caused by an anaerobic bacillus, which multiplies locally causing extensive alterations of the part, and is mostly fatal in its results.

This disease used to be classed as a form of anthrax but is no longer, classified as such.

It is enzootic in certain districts and localities, and generally occurs from June to November, and in swampy districts.

The symptoms are similar and somewhat hard to distinguish from malignant Oedema.

It does not affect calves as they are not fed on herbage.

Immunity from an attack lasts, and old animals raised in an infected district are generally immune.

Some animals have complete immunity, as dogs, swine, cats, rabbits and man. The susceptible ones are cattle, sheep, goats and guinea pigs. The diseased flesh may be safely fed to dogs, swine and people. When inoculated into horses the virus only produces local irritation.

The bacillus is called the *Bacillus Chauvaci*, after Chauvaci who discovered it. It is anaerobic, club shaped, and about 5 to 15 μ long. It forms ^{spores} ~~spores~~ ^{Bacillus} found in the tissues and can live in the blood. It forms gas, and contrary to the anthrax forms no spores in the body, grows at

The ordinary temperature of the room liquefies gelatine, and has great power of resistance. Putrefaction has no effect on it, but it ^(the virus) is destroyed by caustic sub 1:1000 or acid carbolic 1:50. Thymol is a good disinfectant. The germ affects the system by a wound deep enough to reach the connective tissues. The incubative period is from 1 to 5 days ^{the} generally about 2 days.

Symptoms or Lesions.

(1) Crepitating tumors

(2) Swelling of lymphatic glands,

(3) Lameness

" Crepitating tumors - The swelling begins as a small sensitive tumor and extends until it may cover all of the body. When pressed it gives a crepitating sound from the gasses in it. The central part becomes dry

and later cold and gangrenous, when opened a dark exudate flows out. There is loss of appetite, a high temperature, weakness, lameness or paralysis, violent colics sometimes, and great prostration as death approaches. A mild form may recover.

Pathological Anatomy.—

Dry gangrene is seen over the tumor, the affected muscles friable and dirty brown or black in color. When a tumor is compressed gas is heard with a disagreeable odor escapes. The lymphatic glands are engorged. Spleen normal, blood in the intestine, hemorrhage in the lungs, heart and pericardium when tumors are situated on the thorax.

Differential Diagnosis of

Tumors crackling while in anthrax
They are solid & contain no gas.

The blood and spleen are also normal in Blk Quarter & not in Anthrax.

The bacillus is club shaped and motile, but in anthrax has square ends and not motile and does not form spores in the body.

In Malignant Oedema they are the rod like & motile but not club shaped. Inoculations of Anthrax virus in the skin produces the disease, but has not this effect with Blk Quarter virus.

Guinea pigs are susceptible while rabbits are immune. Anthrax and Malignant Oedema kills both.

Treatment -

is mainly preventative, by fencing pastures &c. The horses should be屏ed and treated antiseptically.

Vaccination means the use of attenuated virus

inoculation the use of strong virus

Vaccination has been practiced successfully follows:-

Preparation of virus -

10 grammes of effected muscle is dried at 42°C then powdered & mixed with 80 gms. of water. This mixture divided into 12 parts and placed in an incubator, half of these parts being kept at 100°C & the other half at 80°C for 6 hrs.

To inoculate take 10 gms. of dried mixture which was kept at 80°C & mix with 8 gms. water, this then strained through fine linen, and injected about 3 widths of hand from the root of the tail. The needle being inserted from below up and

3 inches deep. Place the thumb over the wound and with the other hand rub the mixture into the connective tissue.

The next inoculation is made with the stronger virus in 6 days later, a little lower down the tail.

~~#~~ After the second inoculation the mice are checked for any signs of disease. If any signs are present the mice are returned to the cage.

Jan'y. 3, 1893.

49

Epizootic Disease of Wild animals
and Cattle.

German swine erysipelas = Wild and Rinder-
schnie is a milder form than
Rinderpest

Both caused by a germ having the
same appearance under the micro-
scope  Germ under microscope, stained by aniline dy.

It is a bacterial disease affecting
any species & is characterized by
external swellings or hepatization of the lungs
It was first seen in the Royal Park
in 1878 & affected ^{wild} hogs & deer, it was
soon communicated to tame cattle
Exanthematos form -

External swellings are seen
in various parts of the body, about the
head, jaw & neck & down - They are
an inflammatory character, hard or
damatous. The swelling may be 6 to 8
inches thick. Stomatitis & pharyngitis may
company this form & cause death.

by suffocation. Show policy pain strain & lie down constantly in the later stages.

Pectoral Form-

The lungs are involved & generally seen in wild animals.

The symptoms are like pneumonia animals may live 5 or 6 days

P. M. Changes

In the exanthematous form the swellings contain serous or gelatinous material of a yellow color.

Lymph nodes enlarged & infiltrated with serum & blood. The mucous membranes thickened & in folds & sometimes have a caseous exudate. Hemorrhages in all parts of the body.

Differs from Anthrax in that the spleen is normal in appearance & the blood is normal in color & character as in health.

P. M. in Pectoral Form.

Septicized lung, the pleura thickened & inflamed, and a copious exudate often present. As much as 30 qts. of pus is sometimes seen in the thoracic cavity.

In the Intestinal Form,

Intestinal membrane swollen, desquamated epithelium, the contents being bloody. In the acute form the animals die suddenly.

This disease has not been communicated to man so far. But communicate from animal to animal by direct contact. East of Germany first described the germ. Differential Diagnosis - from Anthrax -

Blood & spleen normal & absence of bacillus anthracis. It is communicable to pigs which are immune to Anthrax. Sheep resist small doses but die from same anti-anthrax virus. It generally affects the lower of lungs, while pleura pneumonia affects post. aspect.

Pleuræ Pneumonia also develops more slowly.

The prognosis is not favorable about 50% dying.

Treatment -

Medicinal not successful.

Use proper sanitary methods, such as isolation & prevent people and animals from carrying it.

Jan'y. 6, 1893.

53

Fowl Cholera

French = Cholera des poules

German = Geflügellcholera

This is a bacterial disease affecting all poultry and domesticated fowls & also some wild birds.

It was first seen in Lombardy, but has been seen in all countries in late years. Pasteur by his investigations of this disease discovered the method of attenuation virus. The excrements are very rulent and contain the germ in large quantity. The contagion is taken by the food or drink or it may enter by a wound, but not commonly. The germ is oval in shape, resembling that of Rinderscucht somewhat in appearance. As well as entering the alimentary tract it may enter the ^(Germ) respiratory by the medium of dust &c in air. It is generally introduced by

new fowls, birds or rabbits.

It may be communicated to rabbits or mice by inoculation with a very small quantity of virus.

Guinea pigs are not very susceptible. The germs multiply locally but do not penetrate into the body or blood stream as they are anaerobic in character.

Symptoms.

(The average period of incubation is 8 days)

Loss of appetite, yellow colour of excrement at end. In normal excrement one end is white, which is due to the kidney secretion, while the other is natural faeces. Later diarrhoea follows, the excretions being yellowish green towards death.

The temperature rises from 110° to 112° . The wings droop, and the bird draws itself into a ball, and strays off by itself.

55

Becoming sleepy and drowsy.

The crop inactive & filled with food. The comb loses its red hue and becomes white or pale

Pathological Anatomy -

The superficial vessels are bloodless, Liver enlarged and soft. Gall distended with dark bile. Cloaca streaked with blood. Capillaries of mesentery distended. Spleen normal. Pericardium distended with effusion. Lungs congested but not inflamed. Germs seen in tissues.

Etiology -

It is caused by an oval ctenia which is not motile. It does not grow on potato and destroyed by drying, & disinfectants. Rabbits die in from 2 to 48 hrs when infected. It only produces an abscess at point of inoculation in man and

-guinea pigs. The flesh is said to be innocuous when eaten. The germ causes death by forming poisonous alkaloids

Prognosis -

Unfavorable as 90 to 95% die

Prophylaxis -

The houses should be cleaned & disinfected with corros., sub., acid carb., or sulph. acid solutions. The dead should be burned and the sick separated from the well. One attack confers immunity or by inoculation the same result is obtained. The wing being chosen for vaccination. It is said that $2\frac{1}{2}$ albumen from an egg from an infected fowl, causes immunity when inoculated. As it contains alkaloidal poison

57

" — " Jan'y. 10, 1893 — "

Hog Cholera

synonyms —

English = Swine Fever

German = Schweinfest

French = Pneumonic Infection

Swine Plague

synonyms —

English = Pneumo Enteritis,

German = Schweinesauke.

French = Pneumo Enterite.

Both are epizootic diseases of swine caused by a specific bacterium which is similar to the septicæmia one of mice. These diseases were considered the same until the investigations of the Bureau of Animal Industry in 1886, when it was proven that they were different, but often existed together. In 1885 Loescher of Germany described the germ as resembling that of mice septicæmia.



The Hog Cholera germs exist in pairs, are oval in shape, and very motile, they stain at the end first, leaving a clear space in center. If the staining is continued, the germ stains through hout.

Hog cholera is strictly a contagious disease and is more virulent to young pigs. The period of incubation being from 4 to 20 days.

The germ enters by the digestive tract, by means of the food and drink or sometimes by means of the inspired air.

Symptoms -

not plain at first. Acute case die suddenly. The temperature ranges from 105 to 107° F. Bowels at first constive, followed by a foetid & very fluid diarrhea. The respirations are quickened, and a cough is present.

59

The animals have a stupid appearance, grow weak and when moved have a tottering gait. The skin on surface of the belly, neck, etc., becomes reddened, and an eruption follows later, accompanied by a desquamation of the epidermis. The eyes are watery and the lids become gummed by the discharge, following later.

Pathological Anatomy —

In the acute form abundant hemorrhages are seen on the surfaces of internal organs, the spleen engorged and enlarged. The lymphatics are also enlarged and reddened. Hemorrhages in the lung tissue, Liver, Kidneys, and mucous surface of the stomach & intestines. The intestinal contents also bloody. In addition to the above, in a ^{symptoms} older form, in the chronic form

of disease, large ulcerations are seen in the intestines, most commonly near the ilio caecal valve, caecum & etc.

The ulcers are projecting, yellow or black in color and have ragged edges

Swine Plague

might be classed as a contagious pneumatic disease, the germ enters by the respiratory tract and only differs in appearance from that of St. Cholera, in that it has no flagella and is not motile.

The annual loss in the U. S. from the two diseases is estimated at about \$10,000,000 to \$20,000,000

Symptoms

Pneumonic, from inflammation of lungs, breathing more labored and cough more

frequent than in *H. Cholera*
The course of the disease may
vary from 1 to 2 days to 1 to 2 weeks

Path. Anatomy

Primary localization in the lungs. Large caseous masses, & umbilic tubercle are seen, with fibrinous deposits on the membrane. Granular deposits are seen in the intestines.

Differences in the 2 germs -

H. Cholera germ motile & *S. Plague* not
" " " fatal to rabbits & guinea pigs &
S. Plague to pigeons in addition
Feeding the ^{Plague} germ & spraying with it
does not produce disease

Both produce disease when inoculated. *S. Plague* germ will not grow in potato while others will.

H. Cholera germs hardy & Plague germs delicate

Prognosis-

The loss depends on the virulence. When very virulent 90 to 95% die. Most die in the early part of an attack.

Treatment-

must be of a sanitary nature. Move all animals to high ground to prevent men dogs &c from carrying the contagion. Move the well from the sick and disinfect those roughly with lime, acid carb, acid sulphuric or corros sub.

Nearly all stock yards are affected and the disease is often contracted here or sometimes at fairs &c.

To prevent, disinfect stock cars, & slaughter diseased & exposed animals & burn the carcasses.

3

Jan'y. 13, 1893.

Contagious Pneumonia of Horses -

Synonymy -

(1) Oedematous Pneumonia

(2) Pleura Pneumonia Contagiosa

Equorum

(3) German = Brustseuche

(4) French = Pleurapneumonie Contagieuse
du cheval

This is a contagious inflammation of the lungs and pleura of horses. One attack conferring immunity which lasts several years, or all of the time of the animal. Seen in stables containing a large number of horses, and more frequent in winter than summer. Attacking only, & debilitated animals before the older ones. Attacking a large as first, later is slower in progress. Period of incubation 8 to 14 days.

Symptoms -

Heat when driven, loss of appetite, rapidly increasing fever with shivering, circulation accelerated & weak. Mucous membr. pale of yellow or yellowish red in influenza said to be reddish violet or brownish red

- (1) Lobular -
- (2) Lobar = milder

(1) Lobular form affects the lobules - circumscribed centres of inflammation seen - cough & rapid breathing - If small area, not discoverable by auscultation

Later, centres become confluent generally seen in left lung - Rusty discharge from nose, which dries & forms crusts. Friction sounds when pleura involved - Hydrothorax symptom -

Inflammatory centres break down giving tympanic sounds over them. Favorable termination can only be expected if no complications are present.

⁽²⁾Lobar -

Milder form & lobes affected. Discovred by the extent of dullness. Begins in ant & sup portions and generally confined to one side (left) showing general pneumonic symptoms. Then other organs are implicated have, colic, diarrhoea, haemorrhage &c when intestines - haematuria from kidneys, meningitis & cerebral paralysis from brain, laminitis, arthritis, carditis &c according to the organs affected.

Typical form in strong horses - the period from 5 to 8 days.

Abortive form in old animals - 1 to 5 days arrested at period of congestion

Chronic form from caseous centres,
degeneration occurs sometimes &
is then very virulent

P. M. Lesions -

In Sobar -

multiple centres of inflammation
accompanied by pleurisy and
parenchymatous inflammation at the
base of the lungs. Areas hepatalized,
red - surrounded by white zone of
leucocytes - These break down &
form cavities, the walls of which are
formed of fibrous tissue.

There may be adhesions between the
lungs & thorax if chronic and a red-
dish brown liquid (30gts) in the cavity
Parenchymatous inflammation of other
organs

Etiology -

Contagion enters by respiratory tract
It is more enzootic than epizootic

Treatment -

Invading body in cold cloths +
cold injections

Antifebrine &c

Digitalis - camphor, coffee, hyocyanine
counter irritation to chest &c

Calomel when intestines involved

Sanitary measures of great importance.

Pneumocæteritis -

A disease showing symptoms like
the preceding - and said to be caused
by germs entering from the food. The
organisms being streptococcus & a
diplococcus - It may localize in
any part but generally in lung & inter-
mes first

Treatment -

Good food moistened with acid-
ulated water to destroy the germs - Anti-
pyretics & eliminatives as Tartar (creamy)

Jan'y 17, 1893.

Influenza

Ger. = Pferdestoerpe Darmseuche

Fr. = Fievre typhoïde

This is a contagious disease with a very high fever

The last European epidemic was seen in 1881 to 1883

Etiology -

It is developed as a result of contagion - The germ is not known. Said to be disseminated by the expired air

The incubative period being from 4 to 7 days -

The circulative apparatus, nervous system, respiratory & digestive tract & in fact all the organs may be affected

Symptoms -

Rise of temperature - Stationary for 3 to 5 or 6 days and then it decreases rapidly - pulse accelerated - mucous membranes

violet red which is said to differ from contagious pneumonia, in that the latter shows a yellowish membrane nervous depression & weakness.

And many symptoms according to the organs complicated duration, 6 to 10 days.

P.M -

mucous membr of stomach & intestines congested, thickened and containing a glutinous matter

Respiratory organs reddened, swollen & congested

Degeneration of other organs -

It is said to be distinguished from contagious pneumonia from affecting the digestive tract first & the color of the mucous membr. Loss 3 to 10% from it.

Treat -

Good care, ventilation & good food &c

~~to organs~~

Jan. 20, 1893.

Glanders & Farcy -

Latin = Malleus Tarcina Equid

Fr = Morve et Farcy

Gr = Rotz, Rotz & Nurnkrankheit -

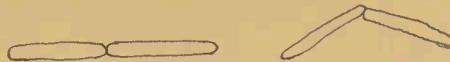
These two diseases are one and the same, They are contagious, being due to a bacillus, and are transmissible to man under certain conditions.

The disease was first described by Aristotle -

The form called Glanders affects the respiratory and adjacent tissues, while Farcy affects the subcutaneous tissues and lymphatic glands.

The Bovine species are not susceptible to the disease. While all horses are not equally susceptible

Etiology -



The bacillus causing the disease, is from $\frac{1}{3}$ to $\frac{2}{3}$ the diameter of a corpuscle, it may be straight or curved, and rounded at the ends, and united in couples by the ends.

It is best stained with Methyl blue and will not grow outside of the body except by artificial means.

It resists putrefaction for 2 or 3 weeks, but 176°F kills it in 5 minutes, as does 1:5000 corros sub.

The germ is found in the blood in the acute form, or when the internal organs are affected, and it may enter the system by the inspired air or by wounds.

It may pass from the mother to the foetus

The Chronic form is accompanied by an insidious discharge from one or both nostrils. It is of a thin mucous character, intermittent, transparent & greyish in color. As the disease advances it becomes more viscid, yellowish grey and later yellowish green.

Hemorrhages may occur from rupture of the blood vessels. Nodules appear on the mucous membrane. These later burst & become ulcers, which may heal & leave cicatrices.

The inferior maxillary glands on the same side as the discharge may be enlarged and adhere to the bone. The disease may be accompanied by an intermittent febrile condition. When the lungs are affected, it may lie dormant for a year or more. The disease existing for a period of 6 or 7 years.

In Farcy the lymphatic glands and vessels are nodular, and followed later by a discharge. This form is due to embolism from particles of matter entering the circulation and lodging in the capillaries.

Acute form -

This form occurs in about 10% of the animals affected. It shows the characters of infectious septicæmia and may follow the chronic form.

It begins with chills, intense fever (107%) and a purulent discharge from the nostrils, the mucous membrane being covered by nodules and ulcers which become confluent and discharge a fetidous exudate, which may show in 2 or 3 days from the first symptoms. The added symptoms, ^{of farcy} may be present. Diarrhea is abundant, the course of the disease rapid, death occurring in 13 or 14 days.

Symptoms in Man -

The virus is generally introduced by the respiratory tract, lips, eyes, or wounds. The period of incubation from 4 to 5 days. The parts affected are swollen and painful, the lymphatic glands leading away inflamed. Discharge from the nose, ulceration of the mucous membrane, and swelling of the joints. When a person is susceptible he may die in a few hours, if a large dose is received. May sometimes live for months & years in the chronic form. Then the disease is local, the part may be cauterized deeply and effect a cure if done before the germ is disseminated.

P. M- (Principal lesions)

- 2 forms are said to exist, but are hard to distinguish apart
- 1) Tuberculous G, characterized by ulcers & nodules
- 2) Diffuse G - by thickened memb. and diffuse swellings

Tuberculous is generally seen in the upper part of the tract. Nodules are seen, formed of lymphoid cells & containing a bacillus & surrounded by a red zone. The nodule degenerates & forms an ulcer, with a bogged edge & grey bottom. They occur in masses, or are isolated. They are found in the sinuses, guttural pouches, lary & trachea, bronchi & tubes.

Nodules may occur in the lungs from embolism, they are generally conical in shape with the base toward the periphery and generally superficial

They may cause circumscribed pneumonia, bronchitis, peribronchitis, bronchiectasis or atelectasis. Dense fibrous tumors or cavities may form as a result of large areas being affected.

May find lesions in the brain, kidneys, liver, spleen & testicles.

Table showing % having different organs affected, in 331 of Glandersed horses

152	Nasal lesions
294	Lung "
218	Skin "
846	Nasal & Lung "
217	" " & skin "
164	" & skin
49	Lung & skin

77

Diagnosis by the following ways:-

1) Clinical Examination

- 2) Examination of nose with rhinoscope
- 3) Respiration maxillary sinuses
- 4) Extrication & examination of max or other lymphatic glands
- 5) Artificial production of fever which changes to acute form (not reliable)
- 6) Auto inoculation or malleation, with own discharge
- 7) Inoculation of other animals, as-
(a) Ass - (b) horse - ^(c) guinea pig (male)
Inoculate guinea pig in belly
1st week an ulcer forms at the seat of inoculation
- 2nd week - the testicles are indurated & may have a purulent arthritis and discharge from the nose & other lesions similar to those seen in the horse!
- 8) Examination for bacilli

(9) Injections with Mallon

which produces inflammatory swellings at the point of inoculation
A suspect should have the temperature taken every 2 hrs during a day before inoculating. And after inoculation the same, so they can be compared.

The temperature may rise $2\frac{1}{2}^{\circ}$ & begins in 4 to 8 hrs. after & disappears in 36 hrs.

A spontaneous cure sometimes occurs

Treatment -

Destroy & disinfect, every thing that contacted the animal.

Feby 3 1893

79

Tuberculosis

Synonyms -

English { Phtisis pulmonalis
consumption

German { Tuberculose
Perlsucht

French { Pommeâine
Tuberculose

is - a contagious disease
characterized by - tubercles which
- are caused by the bacil. tuber-
culosis.

As early as 1343 laws were in
force in Germany prohibiting the
sale of tuberculous meat.

In 1865 Willnham first demon-
strated the inoculability of tuber-
culosis

In 1882 Koch isolated and
cultured the bacillus

It is common in swine & poultry &
less so in horses, sheep, & dogs

Wild animals contract it when confined. It is said that 1/8 to 1/6 of the population may die from it. Of milk cows from 3 to 5%.

" beef cattle 1 to 2 in every 1000. The disease in fowls is the same but the physiological characters differ from the change in temp. &c

Etiology -

Bacil. tuberculosis is rod shaped multiplies by fission produces spores ^{Boat not 1894} They are found in & between cells. Retain their vitality in water for from 2 weeks to 4 months. A temperature of 185° F will kill them in minutes or 5% sol of Pot. Iod or corros- sub 1 to 1000.

Neither sunfaktion nor freezing have any effect on the bacillus.

The disease is generally contracted by cohabitation, the germ being disseminated by means of the air, sputa &c, it enters by the Respiratory or digestive Tract or by wounds. The mucous membrane need not be broken to gain entrance. It may cause local disease or enter into the lymphatics & be carried back into the body.

Calves may contract it from the milk, or the bacillus may pass from the mother to the foetus and develop when the calf has attained its growth. Then it is hereditary.

Certain predisposing causes may be mentioned, as, debility, catarrhal affections &c

Symptoms -

(1) Pulmonary form -

short cough, rarely a discharge from the nose, foetal breath and general abnormal ^{lung} symptoms.

Sometimes tympanitis from pressure on the oesophagus, by the tuberculous mediastinal lymphatic glands

Bloody urine from diseased lymphatics in kidneys,

(2) Pearl disease or tubercles on serous membranes

Similar when the pleura is affected. When the peritoneum, peritoneal oestrum, &c.

(3) Nervous Syst -

With resulting sympt.

All parts of the body may be affected, with & show symptoms according to the parts affected

How tubercles are formed-

Bacillus alights, causes irritation & proliferation of connective tissue cells. White blood corpuscles congregate & surround the germ, the mass becomes surrounded by a fibrous capsule, with a blood vascular zone around it, but no vessels in it. It may degenerate or calcify from this cause. The nodule is at first grey & solid, and a no. may unite & form masses, & the resulting mass break down.

Statistics as to the per cent of organs affected-

Lungs	75%	of cases
Pleura	55%	" "
Peritoneum	48 "	" "
Bronchial & mediastinal Lymph. glands	29 "	" "
Liver	28 "	" "
Spleen	19 "	" "
Uterus	10 "	" "
Udder	1 "	" "
Ovary	1 "	" "

Diagnosis with Guinea pigs -

Inoculate two - One in the abdominal cavity & the other in the skin - If one dies from septicaemia other may be kept & P.M. held when the disease has had time to produce lesions internally.

Diag. with Tuberculin

Dose - $\frac{3}{10}$ to $\frac{5}{10}$ grms.

The temp or ure should be taken before & after inoculation the same as in using mallein (which see)

A rise in temperature from $2\frac{1}{2}^{\circ}\text{F}$ up may be looked for in from 15 to 20 hrs. The rise is due to the reaction, and it must be at least $2\frac{1}{2}^{\circ}\text{F}$

Actinomycosis &c may cause a rise
Treat -

Destroy & disinfect with corros
ive 1:1000

Only when an animal is in good con-
dition & disease confined to one org. can meat be
used.

Feby 14, 1893.

85

Contagious Pleura Pneumonia

Synonyms -

- (1) Peripneumonia exudativa contagiosa
- (2) Lung Plague
- (3) Epizootic Pleura Pneumonia

Fr = Peripneumonie Contigieuse

Gr = Lungenschwelle

It is a contagious epizootic disease of bovines, occasioning intense inflammation of the lungs and pleura

The disease is supposed to have existed during Aristotle's time, however in that not described with certainty until 1713 and during this year was seen and described thoroughly in Switzerland, and several other European countries

First seen in N. Y. in 1843. an affected cow being brought to Brooklyn. The N. Y. was freed from it in Sept. 1873.

Genl Characters

It is confined to bovines and has an incubative period of from 2 weeks - to 2 mos.

Etiology -

The germ has never been discovered. The contagion may be carried some distance and the animals do not have to come in contact in order to transmit it.

Symptoms.

"Acute"

seen in hot weather -
rapid breathing - groans during expiration - elbows turned out & back arched - head & neck extended - rumination stopped & later diarrhea fatal in 1 to 3 weeks

An extreme mild form may exist and is quite dangerous as the animals recover and the disease may be transmitted and become

very virulent in other animals
 The symptoms shown in this form are:
 a cough for a week or so and the
 animal recovers

(2) Sub Acute

Cough - eat some - Tenderness
 when pressed between ribs - unthrifly
 look - temperature 103 to 105° F.

Genl. Pneumonic sounds in thorax -
 They may die in from 3 to 8 weeks
 or seemingly improve or may im-
 prove entirely & get well in rare cases

An encysted tumor is present in
 the lungs and it may break down
 or dry up by absorption of its liquid
 contents and leave only a scar.

They remain standing as long as
 they have strength and when
 they go down, lie on the affected
 side. This to relieve the healthy
 one. 40% of exposed animals con-
 tract the disease & $\frac{1}{2}$ of these die.

Pathological Anatomy -

The thoracic cavity contains exudate, with fibrinous materials in it. Diseased lobes are enlarged & solid. Interlobular tissue thickened and infiltrated with a yellowish material which solidifies later & becomes fibrinous. The connective tissue around the bronchial tubes, veins & arteries likewise thickened and the alveoli filled with blood or fibrine, which gives the diseased portions weight and solidity.

The diseased portions vary in color according to the amt. of exudate and inflammation present. Some may be dark brown or black or ⁽²⁾ light brown, and some ⁽³⁾ grey. This varied marbled appearance characterizes this disease from all other pneumonias. In others the hepatisation is all the same age.

A thrombus may be seen in the veins, which is caused by an inflammation of the endothelial lining. The plug being adherent to the vessel wall. (characteristic)

There is no adherent plug in the arteries, but a soft one may form after death.

The contagium enters by the bronchial tubes & may pass through and into the walls of veins or into the interlobular tissue, causing an inflammation, with subsequent clotting of the vein and a consequent hemorrhage into the tubes & alveoli from impeded circulation. Thus accounts for a lobule dying - from non-nourishment. The contagium enters at different periods causing the different ages of hepatisation. A wall of fibrous tissue forms around the diseased part from migration of white corpuscles

Feb. 15 1893

When a large part of a lung is hepatized, in an animal in an infected district it is almost conclusive evidence that the animal has Contagious Pl. Pn.

When an isolated suspicious case is seen be sure and learn the history of the animal and do not confound with "tuberculosis,"

(2) Vermous bronchitis - which occurs in adults as well as young - The lung suffers in not being hep- atized - It is also collapsed & drapsical - and worms are found in the tubes, but not always in those leading to a collapsed portion, as they migrate to a healthy part

(3) Crohnous differs in that the hepaticization is the same through out & no thrombi present.

(4) Broncho pneumonia -

Lower & ant part of

Lung affected - no pleurisy - no mottling - It is a lobular disease
Hemorrhage and exudation seen
in alveoli

(5) Intestinal Pn -

Lung tissue soft & spongy -
& all the same color - no pleurisy

Invaculation

gives a certain degree
of immunity, but is dangerous
as the inoculated animal may
spread the disease.

Lymph is squeezed from
a portion of lung (acute stage) and
inserted into the ^{skin of} tail by means of
a lance or drawing a piece of yarn
through which has been previously
soaked in the lymph - 2% may die
from the operation

It appears safe to use flesh
from regular cases without any com-
plications. (Excuse me, I don't eat meat)

Feby. 17, 1893 -

- (1) Southern Cattle Fever
- (2) Texas Fever
- (3) Distemper
- (4) Murrain
- (5) Red Mater
- (6) Splenitic Fever
- (7) Spanish "
- (8) Acclimation".

} Synonyms for
the same disease

Description found in cattle Book

Feb 21, 1893 -

Actinomy cosio

Refer to Govt Cattle Book

Feby 25-1893 -

93

Variola Equina or Horse Pox

" Vaccinia, Cow "

" Caprina " Goat "

" Swilla " Porcine "

Variola affects nearly all animals
and each species has its own
variety.

It is a contagious disease
characterized by fever and
eruption on the skin.

It is quite fatal to sheep-
1 million being lost in France in
1819.

1793 Jenner transmitted cow pox
to man. The operation being
termed vaccination from vaccinia
the name of the disease in cows.
Cow & horse pox are said to be
identical

Chamrea thinks small pox differs
from Cow Pox

Contagion exists from exhalations and discharges

One attack generally confers immunity -

Sheep Pox -

~~Sheep Pox~~ Is the most serious form of variola. The virus retaining its vitality for 5 or 6 mos. The disease is introduced by sick animals or by indirect means. This form of disease is communicable to the horse and ox and vis-a-versa

The contagion is volatile in sheep pox and fixed in cow pox

The period of incubation is from 3 to 7 days - Eruptions are seen over the skin - accompanied by catarrh - salivation, cough, diarrhoea Pustules sometimes unite & form gangrenous patches - Lymph glands swell & abscesses form.

Pneumonia, laryngitis may be complications

When it runs a regular course the period of duration is about 3 wks. Loss, $\frac{1}{10}$ in mild and $\frac{50}{100}$ in severe cases.

Horse Pox

 The horse is susceptible to sheep, cow and small pox. The eruption generally first seen on the heels, in the region of the pasterns - The disease being contracted from the blacksmith's apron, being carried by this means.

The eruption is sometimes seen around the lips & mouth. Autoginus Pustular Stomatitis is thought to be a form of variola.

Venereal exanthema is also said to be a form of cow & horse pox and shows the following symptoms: vesicles & pustules

on the organs, no general fever & recovery in 3 or 4 weeks

May have aggravated cases.

Swine Pox

is contracted from the straw from beds of small pox patients and from cow pox -
Eruption on neck, back, head.

Cow Pox

~~Swine Pox~~ Pustules on teats & udder -
The teats swollen & red. The vesicles mature in 10 days, and this is the time at which they should be utilized for inoculation.

The contagion is carried by milkers and spreads slowly.
The total duration of the disease is about 20 days

Course - 5-periods -

(1) Incubation	1 week
(2) Initial period	1 - 2 days
(3) Eruptive "	6 - 8 "
(4) Suppurative "	2 - 3 "
(5) Desiccative "	5 - 6 "

accompanied by
fever symptoms

The eruption begins with red spots resembling flea bites - These change to papules and later to vesicles the size of a pea. A depression occurs in the centre called the umbilicus and is a pathognomonic symptom. When the contents are visible they are weight for inoculation. Suppuration follows & the depression disappears. (Leave ~~the~~ depression) secondary ~~vesicle~~ when pustules appear - Crusts form during the latter period. Gangrene sometimes occurs when the vesicles become confluent - from abnormal course.

Feby 28, 1893.

Treatment

Drench with sol. creoline

Give easily digested food

When the genital organs are affected
the animals should not be bred
for some time afterSheep are sometimes inoculated as
follows - Take lymph &
inject into internal surf of ear
or under tailEpizootic AbortionThe infection is conveyed
by the litter or by switching the
tailsNocard thinks the organisms
multiply between the chorion &
maternal membraneThis renders the mucous mem-
brane acid which explains the

cause of sterility as the spermatozoa cannot live in an acid medium

This disease is seen in sheep & goats sometimes but not as frequently as in mares & cows

It most frequently happens in cows which have been pregnant 3 to 7 months

And in mares 3 to 9 months

Symptoms -

sometimes redness and a discharge is seen followed by abortion, and again abortion occurs suddenly without any premonitory symptoms

Prevention

Animals should not be introduced from an infected district. Males that have been serving infected females should not be used on others.

Disinfect the premises thoroughly preferably with Acid Sulph if a dairy herd is its poisonous affects are less than corros sub.

Afterbirth must be burned & the udders washed with the following Rx -

Aqua (per)	XX	gts
Glycerine	3 $\frac{1}{2}$	oz
Spt Rect fca	3 $\frac{1}{2}$	oz
Corros Sub	3 $\frac{1}{2}$	oz
7 th		

Above is by Grocans
Better to dilute to $\frac{1}{2}$ strength as some complain of it being too strong.

Distemper in Dogs

This is a contagious febrile disease affecting dogs & cats

One attack confers immunity generally for a life time

It is transmitted by cohabitation the period of incubation being about 4 to 7 days

The Bacterium has not been discovered. The virus is either fixed or volatile and occurs in the mucous secretions and blood pustules of the skin.

The disease is said to affect foxes, wolves, hyenas & jackals

Symptoms

The general symptoms are catarrhal inflammation of the eye, respiratory and digestive organs accompanied by an eructation, & nervous symptoms

Complications may occur - Duration 8 days to 6 weeks

Treatment

according to the symptoms shown

If the respiratory tract be affected
give inhalations of creolin

For the digestive organs calomel

" " Eye sol. cocainic or 2% Boric acid

" Fritters of " 2 to 5% sol. cocainic

" Vomiting - Opium

" Diarrhoea - gum arabic in sol.

" Cough - ammon. muriate in bitter almond

" Nervous Symp. - sulphonal, bromides & chloral

" Weakness - coffee, broth & strychnine

March 3rd 1893

103

Dourine or

Maladie du Coit

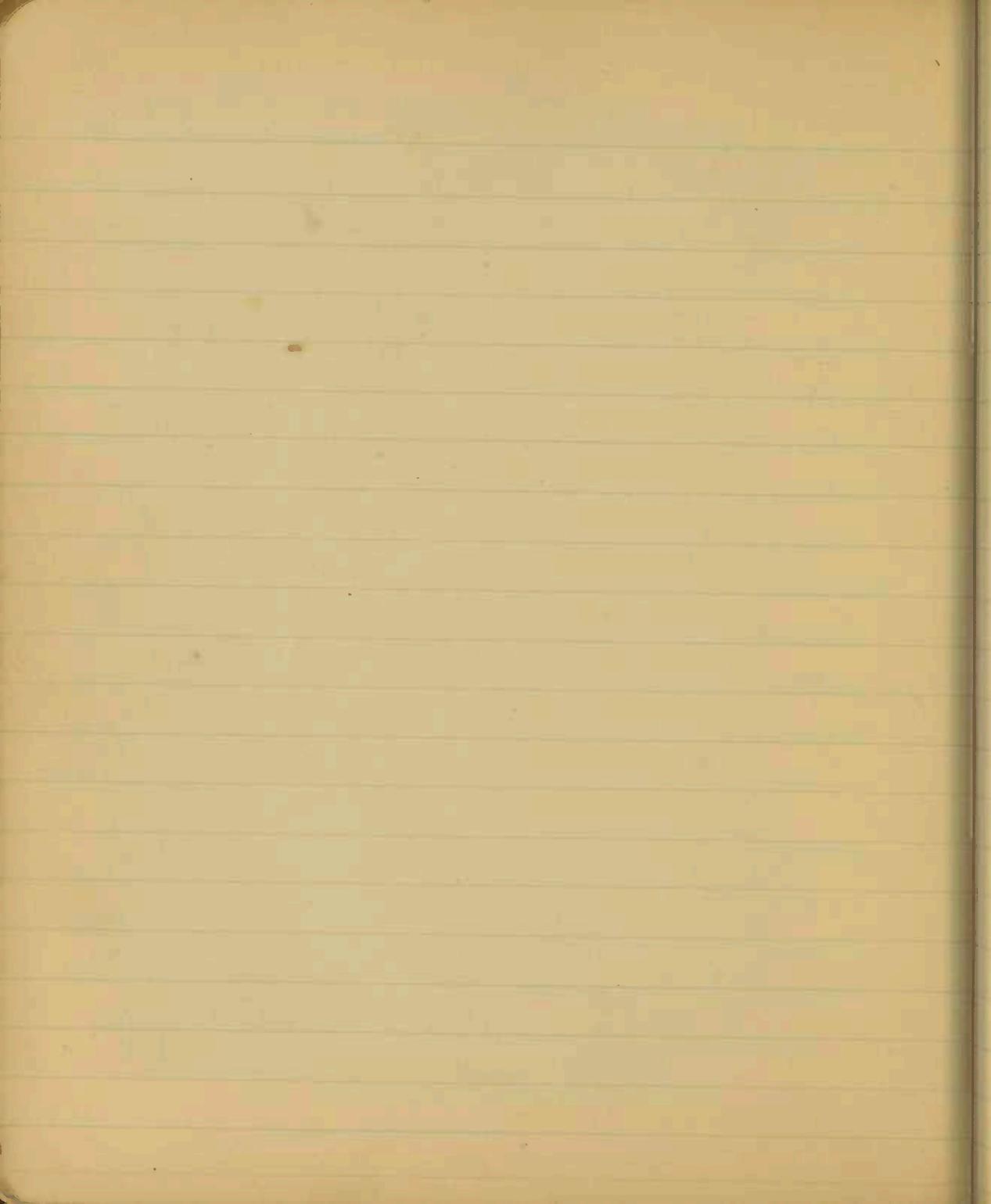
" venerienne

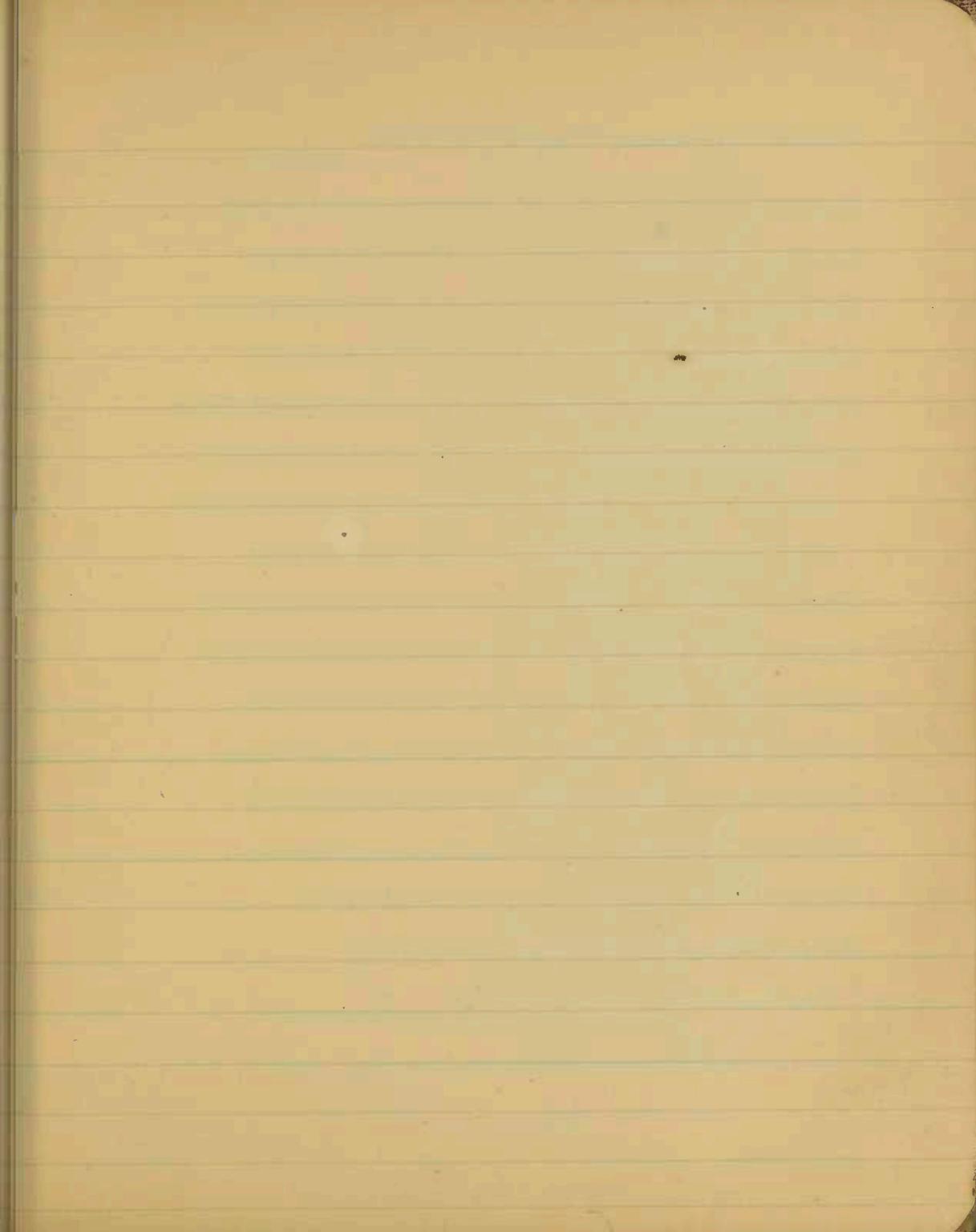
This is a specific malignant venereal disease of horses

It was seen & described in Prussia in 1796

Was first brought to U.S. by a French stallion in 1884. 400 mares were served by him & 63 contracted the disease - It was supposed to have been eradicated but an outbreak occurred in Nebraska last year ('92)

The disease is chronic in character & transmissible by inoculation, localizing itself on the genital organs and later becoming generalized. The active agent has not been demonstrated - It is generally transmitted by copulation





Symptoms - in 1st Stage

In stallion

Period of incubation 8 or 10 days

The symptoms are at first local on the penis & later become generalized. Swelling of the penis and sheath & testicles occurs. These swellings may disappear in a few weeks & to all appearances the animal is well again. However this is not the case as the disease is still in the system -

Later the scrotal & inguinal glands swell & abscesses form. Micturition causes pain. The sexual desire remains unimpaired.

In mare

Odematosus swellings of the vulva occur 8 or 10 days after infection - accompanied by sexual excitement. The mucous membrane is spotted with blood. A discharge follows

105

The clitoris becomes swollen & erect. Loss of pigment occurs in the region of the ames & perineum. Only a small per cent of mares become pregnant and most of them abort.

Round or elliptical raised swelling of the skin occur & may disappear as suddenly. The swellings are due to inflammation of the deep layers of skin. Sty per anthesia of the skin is shown by intense itching.

The gait becomes staggering and the posterior parts of the skeleton waste away. The appetite is retained for a long time.

A chronic form called Bering - man is spoken of, it is however only Variola equina.

Pathological Anatomy-

Debilitating swellings of the parts - (ulcers and erosions rarely occur from this disease, ^{but} are frequently seen in Variola - Consequently the latter is sometimes confounded with Daurine) Abscesses & induration of the scrotum & testicles - The cord atrophies & becomes the seat of fatty degeneration. The course is always chronic - The average duration of the disease is 6 to 12 mos. Occasionally a complete recovery occurs.

Treat -

Locally - antiseptics & astringents
Swellings incised and use counter-irritants

Bichlor mercury & Pot. Soda. internally
Counter irritants for spinal paralyses

Castrate Stud -

No special laws for controlling the disease in the U.S.

Mar. 10, 1893.

107

Epizootic Aphthae

non-Foot and Mouth Disease

Epizootic Fever

Aphthous "

This is a specific epizootic disease generally affecting cattle and sheep, but may affect other animals. It is characterized by fever and vesicles in the mouth and on the feet.

It was seen in Switzerland 1809 and in England in 1839.

The contagion is the most diffusible of any of the domesticated animals. One attack does not confer immunity for any length of time. The loss caused is more particularly from lost secretion of milk. There is danger of man catching it to man.

108
The contagion is fixed or volatile and may be conveyed by air or by direct contact. The virus is in the saliva, milk, excrements and liquid of the vesicles.

It possesses only moderate resistance and generally disappears from a stable in two months, but may remain a year or more. It is destroyed by boiling.

Symptoms in man

Fever - difficulty in swallowing blisters & eruptions in the mouth.

Symptoms in animals

High fever followed by the formation of vesicles and ulceration on the smooth lips & muzzle and above the hoofs and in the cleft.

Period of incubation 1 to 3 days
Blisters in 2 or 3 days which
enlarge to the size of a silver
dollar and sometimes become
confluent.

The epithelium desquamates
leaving red & sensitive erosions
The animal smacks its lips
continuously when these occur.

The milk becomes thick and
has a disagreeable taste, the
animal laps flesh rapidly
The teats in cows become affected
from licking them, the inflam-
mation may extend and cause paren-
chymatous inflammation.

The pharynx & larynx may become
affected by extending inflammation
The latter sometimes drop off.
Gastro intestinal irritation may be
a complication

Anthrax 27

Black Quarter 42

Fever Cholera 53

Hog Cholera + Swine Plague 76

Oedema, Malignant 17

Pyaemia 10

Septicaemia 14
septical Pyaemia 16
trangles 20

Tetanus 23

Wild auf Rundesche 49

